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ILLUSTRATION OF FLAG BY CHUCK SCHMIDT

Communications, true user friendliness, and software integration are crucial for the professional workstation package.

THE WORKSTATION MARKET GAMBLE

by Alexander Stein

The growing number of systems touted as professional workstations has raised several issues on the nature of managerial microcomputer use. First and foremost is the issue of market definition. Despite numerous articles and reports on professional personal computer requirements, there has been little agreement on a set of criteria for the professional workstation.

A second critical issue, which is clearly related to this problem of product definition, is the apparent resistance of many professionals to using non-telephone-based electronic equipment. For many potential buyers, the use of a personal computer contradicts the stereotype of a strong, influential manager; up to now, personal computer use has generally been relegated to supervisory and secretarial levels in the organization.

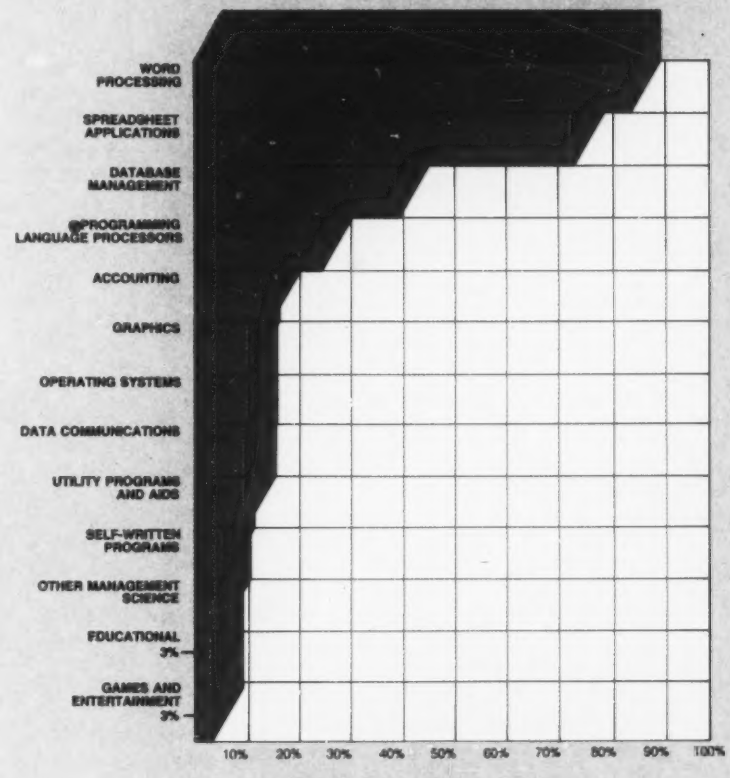
To better meet the professional's requirements, workstations must be designed to adapt easily and effectively to the user's work habits, not the other way around. Knowing how PCs are being used by professionals is an important first step to designing a workstation for them. Given the potential market—$8.7 billion will be spent on professional/business personal computers this year, or about half of the total $17.8 billion expected to be spent overall for desktop products—close attention to what the users want is important.

A recently completed survey of 900 personal computer users in the home and work place has yielded extensive information on use patterns, purchase habits, and purchase intentions. Not surprisingly, the professional employs his or her personal computer primarily for word processing and spreadsheet applications. Approximately 85% of business personal computer users regularly sit down at a keyboard and work on a memo or letter with the assistance of a word processing package. This is the most popular application, not, as widely assumed, the spreadsheet; it is regularly used by 74% of users. Database management software was listed as the third most commonly used package, with 40% of the respondents acknowledging a significant amount of time spent with such packages. Other typical managerial activities, such as graphics development and data communications, are significantly less important to these business personal computer operators.

These use patterns contradict most of the conventional wisdom held by some hardware and software designers, original equipment manufacturers, and value-added resellers. Professionals spend more time using a keyboard for word processing than previously thought, for example, indicating that the awkward keyboards on some purported workstations will be a problem. Also, the integra-

FIG. 1

MOST COMMON WORKPLACE APPLICATIONS
(PERCENT OF ALL RESPONDENTS INDICATING SOME USE OF EACH APPLICATION)

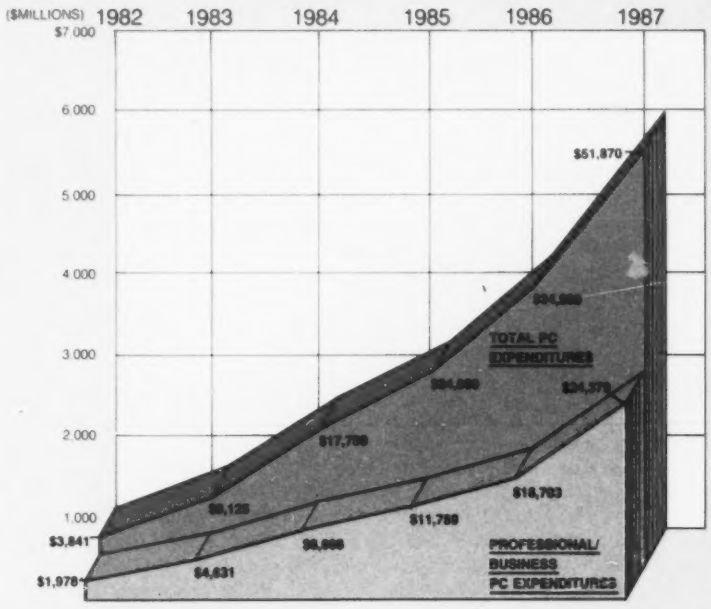


SOURCE: DATAQUEST SURVEY OF 900 PC USERS

CHARTS BY CYNTHIA STODDARD

FIG. 2

PERSONAL COMPUTER* EXPENDITURES WORLDWIDE 1982-1987



* SYSTEMS SELLING FOR $1,000-$5,000 IN TYPICAL SINGLE-USER CONFIGURATION

SOURCE: DATAQUEST

tion concept cannot be underestimated.

The manager-professional typically spends nearly 20% of his or her day on the telephone and another 30% generating verbal and numerical documents, including charts and graphs. The equipment used to produce this output—the personal computer, telephone, pencil and paper—address these needs on an individualized basis, but writing, calculating, graphing, and communicating are not discrete activities. Indeed, they are normally conducted in tandem, and together enhance the overall productivity of the professional. Hence, integration of functions and features is of critical importance.

DESKTOP MACHINES PREVAIL

And unlike what others may have said or thought, use patterns point increasingly toward further reliance on desktop machines. More than 55% of those surveyed said they used their systems for longer than eight hours a week, on average; 38% said they used the system more than 16 hours a week, or *more than three hours a day*. That's why furniture, keyboards, and other ergonomic concerns are so popular.

The need for integrated software packages is also clear—more than 80% of the users report owning more than four software packages. The evidence reports a growing "personal computer dependence" among current users, especially if a more conducive workstation is available.

So what is a true professional workstation? A professional workstation calls for the integration of many of the diverse capabilities currently touted by manufacturers. Few offer all the pieces in one place at a price that does not threaten the budget of a Fortune 500 company, though. The capabilities of a true workstation fall into three broad categories: integrated applications software, user-friendly interfaces, and full communications capability.

Application integration is increasingly becoming a requirement for all but the low-end personal computers for under $2,000. One package combining a spreadsheet, word processing, and data file management in a multiwindow environment is part of the integrated software required for a professional workstation.

In the future, integrated software will incorporate many of the best features of the 1-2-3 package from Lotus Development Corp. and the windows of Quarterdeck's DesQ or APX's Applications Executive package. These supersoftware packages will offer full integration, complete transparency, and multiwindowing, and will permit the user to access information from numerous sources for insertion in a single document.

User-friendly, man-machine interfaces currently appear in a number of forms. Xerox and Apple are apparently committed to the mouse, while Hewlett-Packard clearly favors the touch screen. A logical next step is voice recognition (VR) and emulation technology, which several semiconductor manufacturers, including Texas Instruments, have been exploring for some time (Oct., p. 181). Currently available VR workstations are generally limited to an under-200 word vocabulary, but efforts are under way to expand these capabilities to several thousand words.

Communications capabilities are receiving a great deal of attention from both manufacturers and users. IBM's recent introduction of the P C XT, P C 370, and the 3270 P C underscore IBM's commitment to integration of the Personal Computer into existing larger IBM shops. The anticipated introduction of an IBM P C networking product will serve to further the cause of communications integration.

Another area of communications integration is highlighted by the introduction of Rolm's Cypress system and the VoiceStation workstation from Sydis. Both products reflect early efforts to integrate telephony with personal computer applications.

A southern California company, Santa Barbara Development Laboratories Inc., will soon introduce many of the key features in a desktop package. The SBDL Executive System incorporates all of the features currently standard on personal computers along with advanced communications and "electronic secretary" applications.

The system has three components: an executive console, a secretarial console, and a desk-side data storage unit. The secretarial workstation is directly linked to the executive console and features a dual-screen-system for viewing applications running simultaneously. An icon-based touch screen design eliminates the executive keyboard interface problem. Also available are touch screen telephony, electronic mail, and teleconferencing for communications with other units through standard telephone lines. An interesting option, the executive touch screen, controls a robot holding the video camera during the teleconferences.

VARIED SOFTWARE FEATURES

Software features of the SBDL system include database management capabilities for text and graphics development and storage, personal calendaring and scheduling functions, with intra-office and remote access capabilities, and standard personal computer work processing and spreadsheet applications that can be accessed via the touch screen or through a standard keyboard. At a price of $25,000 and up for a typical configuration, the Executive System is not for everyone. But it does provide an alternative for the high-level executive who is seeking computing power for his or her daily activities.

The Executive System from SBDL is but one vendor's solution to the nagging

Most users say they spend more than eight hours a week with a machine.

problem of limited personal computer acceptance among professionals. At the same time, an increasing dependence on workstations among initiated users, and the specialized nature of many of these environments, has led to the growing importance of value-added remarketers and other middlemen.

For example, the Financial System Plus from Automatic Data Processing, Clifton, N.J., illustrates this trend. The remote timesharing service for bankers, stockbrokers, and other financial industry professionals now offers a combination of database and local computing package. Market data on 38,000 stocks, bonds, commodities, and options, and a business database with historical information on thousands of companies, are integrated with word processing, the Multiplan electronic spreadsheets, business graphics, local data processing, and public datacom networks.

The new system is built around Convergent Technology's N-GEN, a 16-bit microcomputer. It is designed to provide the broker, analyst, or other professional with a wide range of customer-specific and general market information in a flexible, manageable format.

ADP's major considerations in selecting the N-GEN included a fast microprocessor, the Intel 80186, for quick response time between screens; up to 1 megabyte of internal RAM—sufficient for even the most extended integrated software; a high-resolution, 15-inch screen capable of displaying detailed business graphics; a small, modular footprint design with an optional detached 10MB Winchester hard disk; and optional MS/DOS compatibility to run the vast library of IBM P.C. software.

With 50 data centers worldwide, ADP is in a unique position to offer a diversified financial information program. The new package comprises an extended list of services, ranging from the traditional stock price "ticker" to a sophisticated electronic mail messaging system. Not only does the financial professional have access to a wide range of up-to-date financial data, he or she can also exchange high-priority information with other principals. A variety of custom-tailored programming options is also available.

While ADP may be an unusual VAR in an unusual market, the new package includes the attributes considered critical for success in the professional workstation market. First, there is a strong understanding of the user's business and information requirements. ADP/CT designed a flexible hardware configuration, tailoring the system to individual user environments. In addition, ADP had a large staff for the extensive custom programming necessary for the level of functionality and user friendliness expected of a professional workstation. And last but not least, ADP has a highly responsive support and maintenance capability.

To sell a professional workstation system successfully, the oem must also possess one additional attribute: extensive knowledge of how the professional does his or her job. This requires an intimate awareness of the user's goals, procedures, and tasks. Only with this expertise is it possible to develop a truly productive professional workstation system. ❁

Alexander D. Stein is a senior industry analyst with Dataquest, a San Jose, Calif.–based consulting and market research firm. Before joining Dataquest, Stein was manager of marketing services for Saving Inc. and an analyst for Hazeltine Corp.

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